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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/529,004 | 05/26/2000 | PETER BARSİ | 31443-159708RK | 1269 |
| 7590 | 07/01/2004 | | EXAMINER | |
| VENABLE BAETJER HOWARD & CIVILETTI PO BOX 34385 WASHINGTON, DC 20043-9998 | | | WACHTEL, ALEXIS A | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1764 | |

DATE MAILED: 07/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. 09/529,004 | Applicant(s) BARSI ET AL. |
|------------------------------|-------------------------------|------------------------------|
| Examiner | Art Unit 1764 | |
| Alexis Wachtel | | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 04 March 2004.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 8-22 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) 8 is/are allowed.

6) Claim(s) 9-12, 14, 16, 17, 19, 21 and 22 is/are rejected.

7) Claim(s) 13, 15 and 20 is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(2)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892) 4) Interview Summary (PTO-413)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948) Paper No(s)/Mail Date. ____ .
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date . 5) Notice of Informal Patent Application (PTO-152)
6) Other:

Detailed Action

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 9-12,14,16,17,19,21,22 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,235,676 to Chambers in view of WO 89/04355.

With respects to claim 9, Chambers teaches a closed-loop continuously operating pyrolysis system for processing rubber waste, the system comprising:

- a pyrolysis furnace (Fig.1, item 36);
- a external heating unit operative to heat an outer surface of the pyrolysis furnace, the heating unit including a flue-gas outlet (Fig.1, item 44);
- a gas cooler operative to receive gas from the pyrolysis furnace (Fig.1, item 70);
- a separating unit operative to separate product received from the gas cooler and including a gas outlet (Fig.1, item 80);
- a solid product sump operative to receive solid product from the pyrolysis furnace (Fig.1, item 56);
- a by-pass gas conduit arranged between the heating unit and the gas outlet of the separating unit and operative to feed gas from the gas outlet of the separating unit to the pyrolysis furnace (Fig.1, item 102).

Chambers as set forth above fails to teach a heat exchanger arranged between the pyrolysis furnace and the solid-product sump, the heat exchanger being operative to receive solid product from the pyrolysis furnace and gas from the gas outlet of the separating unit. WO 89/04355 teaches a cooling unit (heat exchanger) located in between the pyrolysis furnace and pyrolyzed material collection zone (Fig.2). Since it is well established that a heat exchanger recovers heat for the purpose of a rendering a process more energetically efficient it would have been obvious to one of ordinary skill to have integrated the heat exchanger in between the pyrolysis furnace and solid product sump of the system disclosed by Chambers. Additionally, having provided the heat exchanger with a gas inlet feeding a cold gas from the condenser to the heat exchanger would have been obvious since the gas could serve as a means by which to cool the hot pyrolyzed material passing through the solid product sump.

Per claim 10: A circulation ventilator and a suction control valve operative to control flow of gas from the gas outlet of the separating unit to the by-pass conduit and the heating unit (Fig.1, item 90).

Per claim 11: A gas-flow control valve operative to control the flow of gas between the circulation ventilator and the heat exchanger (Fig.1, item 95). Examiner notes that a heat exchanger is provided between the pyrolysis furnace and the solid-product sump as claimed per the teachings of WO 89/04355.

With respects to claim 12, Chambers and WO 89/04355 as set forth above fails to teach the use of a gas meter arranged between the gas outlet of the separating unit and the heat exchanger and operative to monitor gas through the gas-flow control valve.

However, gas meters are routinely used to for the purpose of determining operational status of gas flow lines. As a result it would have been obvious to one of ordinary skill in the art, taking the art as a whole to have provided a gas meter as claimed for the purpose of determining the gas flow line's operational status.

Per claim 14: A dosing tank operative to feed the rubber waste to the pyrolysis furnace (Fig.1, item 12).

Per claim 16: Wherein the liquid outlet (Fig.1, item 82) of the separating unit is connected to the heating unit. Examiner notes that an indirect connection of the liquid outlet to the heating unit reads on the claim.

Per claim 17: Wherein the solid-product sump comprises a sampling unit (Fig 1, item 68).

Per claim 19: wherein the gas cooler comprises water-cooled condensers (Fig.1, item 72) and the separating unit (Fig.1, item 80) comprises a gravitational separating unit including a liquid outlet. Examiner notes that the separating unit (80) has an outlet line (82) beneath it which functions by gravity.

With respects to claim 21, Chambers as set forth above fails to teach the use of a pair of gas coolers. However, it is well established that the mere duplication of elements that are intended to be used in tandem is not seen to be inventive. Therefore it would have been obvious to one of ordinary skill to have provided an additional cooler integrated with the first cooler so as to gain greater cooling capacity in the system disclosed by Chambers.

With respect to claim 22, Chambers as set forth fails to teach the use of a plurality of separators (Fig.1, item 80). However, it is well established that the mere duplication of elements that are intended to be used in tandem is not seen to be inventive. Therefore it would have been obvious to one of ordinary skill to have provided an additional separator integrated with the first separator so as to gain greater separating capacity in the system disclosed by Chambers

Allowable Subject Matter

3. The following is a statement of reasons for the indication of allowable subject matter: With respect to claim 8 and 13, no prior art has been found to teach or suggest a closed loop continuously operating system for processing rubber waste that includes a temperature detector operative to measure temperature within the pyrolysis furnace and being operatively connected to the heating unit; and at least one of a pressure gauge and a pressure transmitter operative to indicate a pressure within the pyrolysis furnace and being operatively connected to a suction control valve. Claim 13 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

With respect to claim 15, no prior art has been found to teach the use of a rotary drum pyrolysis furnace with oil burner heating means located exterior to the rotary drum. The closest prior art; US 5716205 to Tratz teaches a rotary drum oven that includes heating elements inside the drum. Claim 15 is objected to as being dependent upon a

rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

With respect to claim 20, no prior art has been found to teach or suggest the use of a concentration meter arranged downstream of the gas outlet of the separating unit.

In particular, no motivation exists for integrating a concentration meter as claimed.

Claim 20 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office Action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alex Wachtel whose telephone number is 571-272-

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1455. The examiner can normally be reached on 10:30am to 6:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Glenn Calderola, can be reached at (571)-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mr. C

Mr. C

Glenn Calderola
Supervisory Patent Examiner
Technology Center 1700